

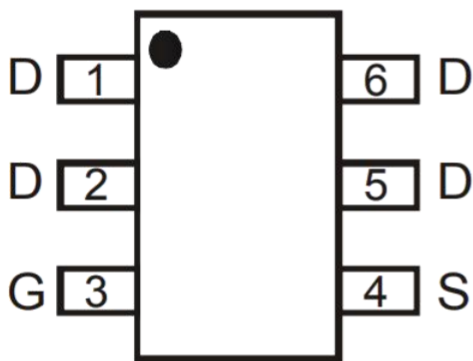
Product Summary

- V_{DS} -20 V
- I_{DS} (at $V_{GS}=-4.5V$) -3 A
- $R_{DS(ON)}$ (at $V_{GS}=-4.5V$) $\leq 95m\Omega$

Application

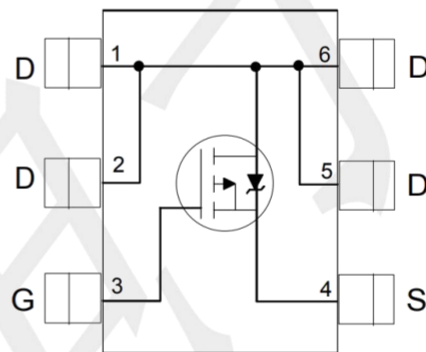
- Interfacing Switching
- Portable equipment and battery
- Load Switch

Package and Pin Configuration



Top View
SOT363

Circuit diagram



Top View

Absolute Maximum Ratings ($T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	± 10	V
Continuous Drain Current	I_D	-3	A
Pulsed Drain Current ($t = 100 \mu s$)	I_{DM}	-7	A
Maximum Power Dissipation $T_A=25^{\circ}C$	P_D	1.5	W
Operating Junction Temperature Range	T_J	-55 to +150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}C$

Thermal Characteristic

PARAMETER		Symbol	Value	Unit
Thermal Resistance from Junction to Ambient ($t \leq 5s$)	PCB Mount (Note)	$R_{\theta JA}$	80	$^{\circ}C/W$

Note : When mounted on 1" square PCB (FR4 material).

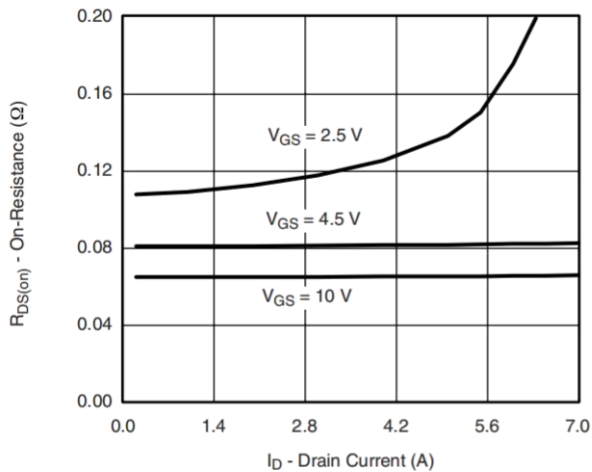
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = -250μA	BV _{DSS}	-20	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V _{GS(th)}	-0.4	-0.6	-1.0	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±10V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = -20V, V _{GS} =0V	I _{DSS}	--	-0.1	-1	μA
	V _{DS} = -20V, T _J =55°C		--	--	-10	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -4.5V, I _D = -3A	R _{DS(on)}	--	80	95	mΩ
	V _{GS} = -2.5V, I _D = -2A		--	100	120	
Forward Transconductance (Note 2)	V _{DS} = -5V, I _D = -2A	g _{fs}	--	10	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = -10V, I _D = - 2.5A, V _{GS} = -4.5V	Q _g	--	5.5	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	0.8	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	1.8	--	
Input Capacitance	V _{DS} = -10V, V _{GS} = 0V, F = 1.0MHz	C _{iss}	--	470	--	pF
Output Capacitance		C _{oss}	--	105	--	
Reverse Transfer Capacitance		C _{rss}	--	80	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DS} = -10V, I _D = - 2A, V _{GS} = -10V, R _G = 6Ω	t _{d(on)}	--	5	--	nS
Rise Time (Note 3)		t _r	--	20	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	22	--	
Fall Time (Note 3)		t _f	--	10	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = -1A	V _{SD}	--	-0.8	-1.1	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	-3	A
Pulsed Current (Note 1)		I _{SM}	--	--	-7	A

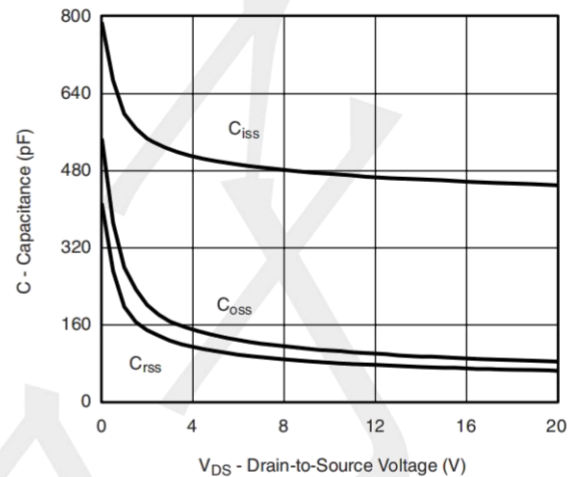
Notes:

1. Pulse test; pulse width ≤ 300 μS, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

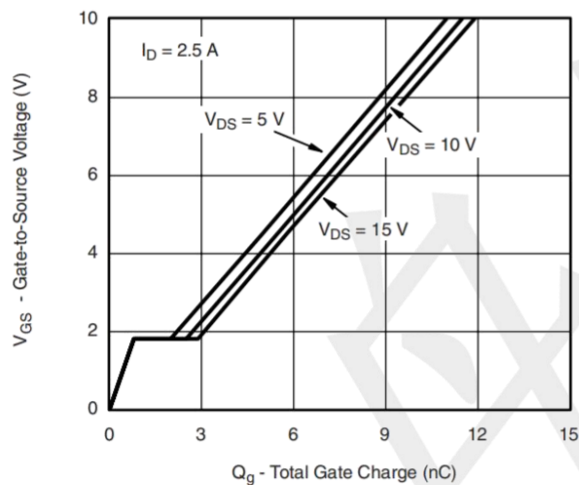
TYPICAL CHARACTERISTICS



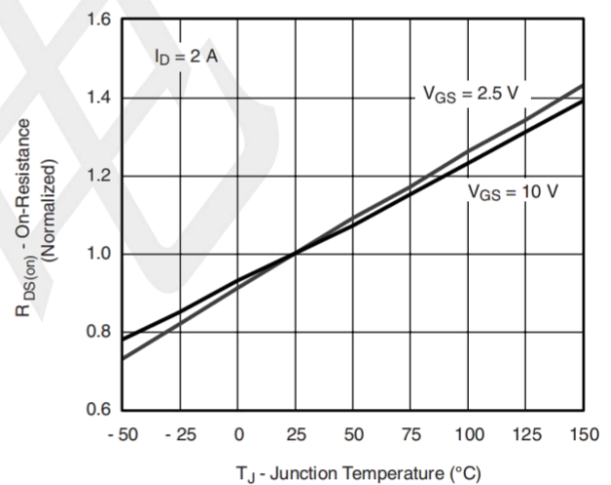
On-Resistance vs. Drain Current and Gate Voltage



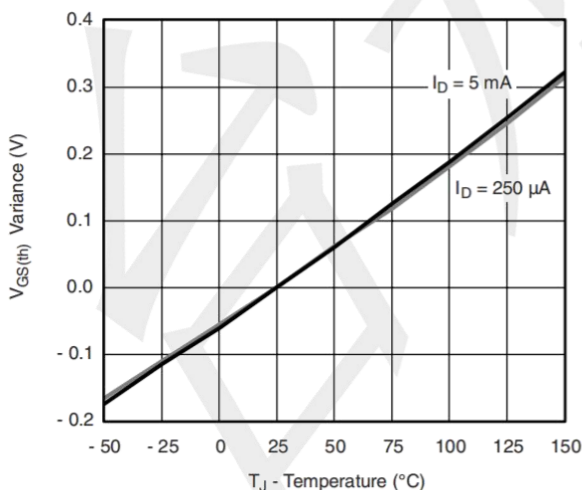
Capacitance



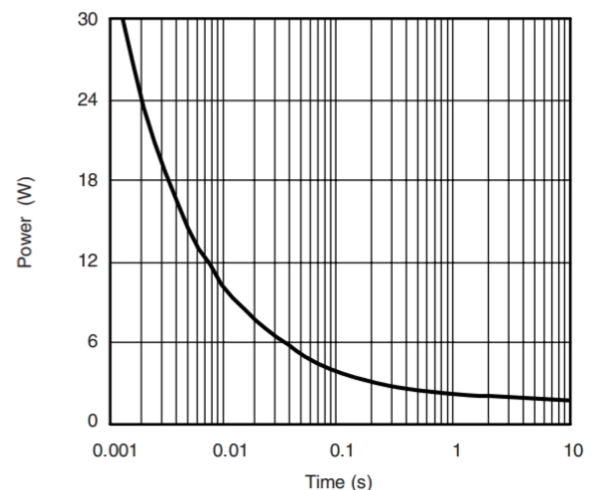
Gate Charge



On-Resistance vs. Junction Temperature



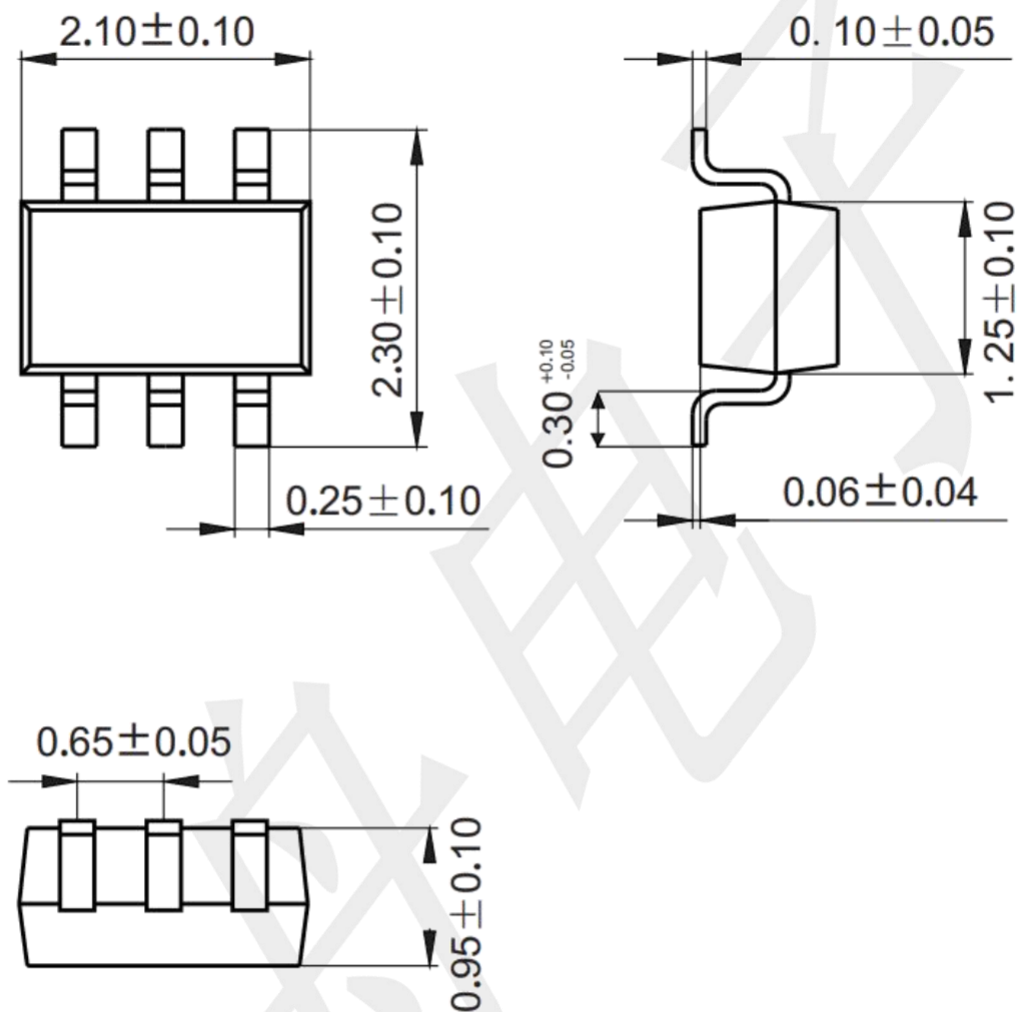
Threshold Voltage



Single Pulse Power, Junction-to-Ambient

Package information (Unit: mm)

SOT-363



Mounting Pad Layout (unit: mm)

